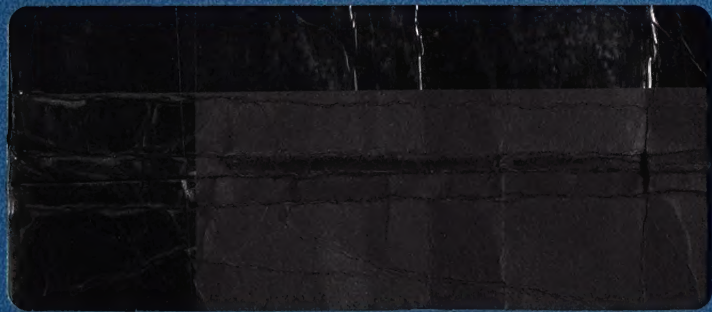


1249





ISOLATED POWER SYSTEM ADAPTOR

MODEL 3113A

OPERATING and SERVICE MANUAL

NEURODYNE-DEMPSEY, INC.

Carson City, Nevada 89701

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3113A-M1-8/77

WARRANTY

The terms and conditions of warranties made by Neurodyne-Dempsey, Inc. with respect to its products are as set forth in its Standard Terms and Conditions of Sale which are included herein by reference. Pursuant to those provisions, Neurodyne-Dempsey warrants that all products are to be free from defects in workmanship and materials for a period of one year, unless a different period is specified, after delivery to customer. If notice of defect is timely given, Neurodyne-Dempsey will either modify the product or part to correct defect, replace the product or part with either new or factory reconditioned complying products or parts, or refund the amount paid for the defective part. The Standard Terms and Conditions of Sale are printed on the reverse side of the company's invoice and acknowledgement of customer's order forms. Additional copies thereof may also be obtained from the company's offices.

CERTIFICATION

This instrument was thoroughly tested and inspected, and found to meet our manufacturing specifications as published, when it was shipped from the factory.

We further certify that our calibration measurements are traceable to the U.S. National Bureau of Standards as applicable.

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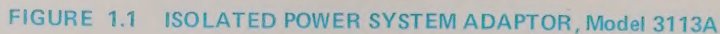
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general information

1.1 ■ INTRODUCTION

- 1.2 This manual contains operating and maintenance instructions for the ISOLATED POWER SYSTEM ADAPTOR, Model 3113A.

1.3 ■ DESCRIPTION

- 1.4 The Model 3113A is an instrument designed to check for proper operation of an isolated power system. It is to be used as an adaptor to the Neurodyne-Dempsey Model 431 series Safety Analyzers. In conjunction with the Safety Analyzers, the 3113A is capable of checking for macro faults, line

voltage, and leakage to the isolated power system. The Model 3113A will also check the line isolation monitor for proper operation.

1.5 ■ SWITCHING CIRCUITS

- 1.6 All operations are controlled by pushbutton switches with the exception of the variable resistance fault test.
- 1.7 In the variable resistance fault test, a pushbutton operating in conjunction with a spring loaded, calibrated potentiometer is provided to measure the level at which the line isolation monitor alarm sounds.

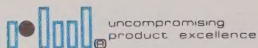


TABLE 1-1 SPECIFICATIONS

RANGES:	
CURRENT;	0- .25, 2.5, and 25mA.
VOLTAGE;	0- 2.5, 0- 25, and 0- 250 V.
ACCURACY:	$\pm 2\%$ of full scale.
INPUT IMPEDANCE:	
CURRENT;	$100\Omega \pm 1\%$ shunted with $0.15\mu\text{f}$ capacitor.
VOLTAGE;	$250\text{K}\Omega \pm 1\%$.
TEMPERATURE RANGE:	15°C to 45°C . (59°F to 113°F .)
MACRO FAULT TEST:	Provides a test to determine if either line 1 or 2 of the isolated power system is at or very close to ground. Light emitting diodes are provided on the front panel to indicate if either line 1 or 2 of the isolated power system has a macro fault.



TABLE 1-1 SPECIFICATIONS (cont.)

**LINE VOLTAGE
TEST:**

Provides a voltage measurement of line 1 to ground,
line 1 to line 2, and line 2 to ground.

HAZARD TEST:

Provides a measurement of total leakage of the isolated
power system including that drawn by the Line Isolation
Monitor.

**VARIABLE RESISTANCE
FAULT TEST:**

Provides a test to determine the exact point at which
the Line Isolation Monitor Alarm sounds on the Isolated
Power System.

**PHYSICAL
CHARACTERISTICS:****FINISH:**

Vinyl covered aluminum with photo-etched and anodized
front panel. Machined and anodized side plates.

SIZE:

11.18 by 27.53 by 13 cm. (4.40 by 10.84 by 5.12 in.)

WEIGHT:

1.25 Kg. (2 lbs 12 ozs.)



uncompromising
product excellence

notes

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installation

2.1 ■ INTRODUCTION

- 2.2 This section contains information for making a visual and electrical inspection of the instrument, processing any claim, repackaging for shipment, and installation procedure.

2.3 ■ INCOMING INSPECTION

- 2.4 Standard receiving practices should have been followed upon delivery of the instrument; i.e., the shipping carton should have been checked for damage and if damage was found, the carrier's agent should have been asked to be present while the instrument was unpacked. Inspect the ISOLATED POWER SYSTEM ADAPTOR, Model 3113A for physical damage, such as bent or broken parts, dents or scratches.
- 2.5 Next, check the electrical performance as soon as possible (see Section V, Performance

Check). This check will indicate whether or not the instrument will operate within the specifications listed in Table 1-1. If a defect is discovered, refer to the claim procedure in this section.

2.6 ■ CLAIMS

- 2.7 If physical damage is found, or operation is not within specifications when the instrument is received, notify the carrier immediately. Please read the sheet on damage and shortage in the back of this manual. If Neurodyne-Dempsey or their sales representative is notified, arrangements will be made for the repair or replacement of the instrument without waiting for the carrier to settle the claim. If damage is to be repaired prior to settlement of the claim, a new purchase order must be issued to cover this work.



2.8 ■ WARRANTY REPAIR

- 2.9 The warranty statement for all Neurodyne-Dempsey products is printed on the back side of the Title page of this manual.
- 2.10 The warranty does not cover the cost of transportation. No C.O.D. shipment will be accepted without prior authorization. All transportation and phone charges will be billed to the customer.
- 2.11 It is recommended that United Parcel Service or Air Parcel Post be used to return the instrument to the factory. Please follow the guidelines given in Paragraphs 2.12 through 2.14 when packaging the instrument to avoid further delay or damage.

2.12 ■ REPACKAGING FOR SHIPMENT

- 2.13 When shipping an instrument to Neurodyne-Dempsey, attach a tag describing the required services and include Model number, Serial number, and return address.

- 2.14 Use the original carton and packaging material for shipment. If they are not available, use the following guide for repackaging:

- a) Use a double-walled carton of sufficient strength for the weight to be shipped.
- b) Use heavy paper or cardboard to protect all instrument surfaces. Use a non-abrasive material around all projecting parts.
- c) Use at least four inches of tightly packed industrial-approved shock absorbing material around the instrument.

2.15 ■ INSTALLATION

- 2.16 The Model 3113A was designed primarily for use with the Model 431F Safety Analyzer and is shipped from the factory set up for that model. If the 3113A is to be used on a 431 or 431A Safety Analyzer, the power plug of the 3113A is moved to the left and another dust cover installed.
- 2.17 To change the position of the power plug proceed as follows;



- a) Use a small straight blade screwdriver to remove the six pop-in fasteners that hold the plastic dust cover on.
- b) Remove the two screws holding the power plug bracket in place. Position the power plug to the correct position and reinstall the screws.
- c) Install the correct dust cover using the six fasteners removed in sub par. a).

431/431A – Dust Cover order no. 5023-0028

431F – Dust Cover order no. 5023-0027

2.18 On the 431 instrument on which the 3113A will be used, swing the shorting link connect between LOW and GND 90° and lock in position with the GND jack.

2.19 The 3113A can now be installed on the 431 and is ready for use.

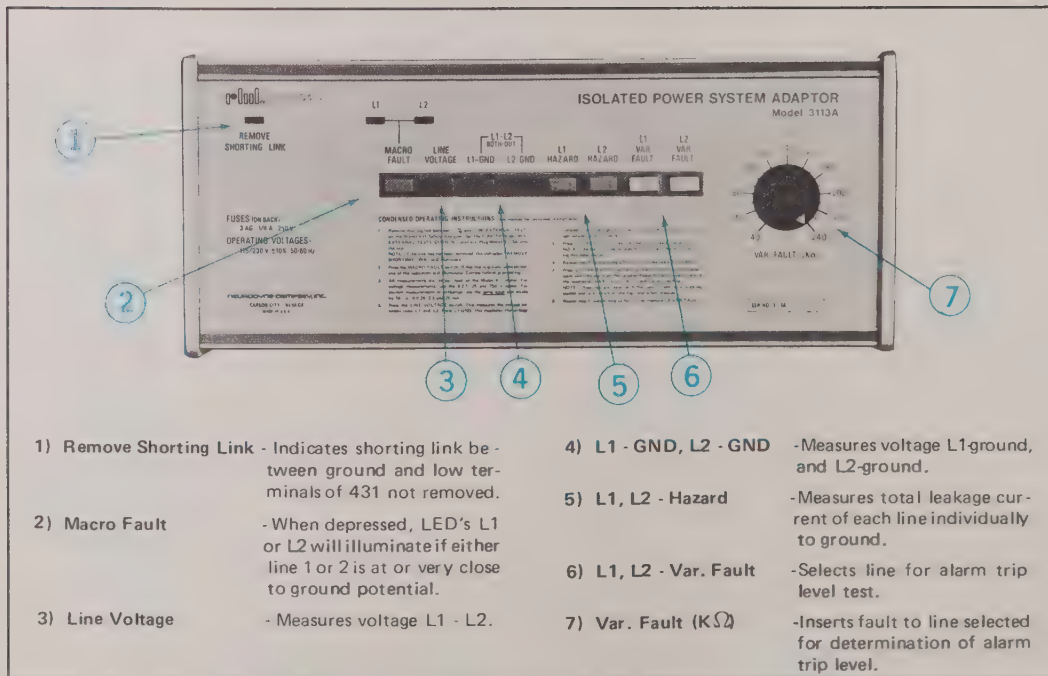


FIGURE 3.1 OPERATING CONTROLS and FUNCTIONS

operation

3.1 ■ INTRODUCTION

3.2 The Model 3113A ISOLATED POWER SYSTEM ADAPTOR is an instrument that, when used in conjunction with the Model 431 series Safety Analyzer, enables one to measure macro faults, line voltage, hazard current, and the alarm trip level current for the Line Isolation Monitor.

3.3 It is desirable to perform the tests in a sequential order. The pushbuttons were human engineered to perform the tests from a high or macro fault level down to progressively lower fault levels. Testing should begin with the macro fault test.

3.4 ■ SET UP FOR TESTING

3.5 There are two versions of the bottom dust cover for the Model 3113A. One is made for use in conjunction with the 431 and 431A series and the other is to be used with the 431F series of Safety

Analyzers. It is possible to convert from use with one model 431 to another by ordering the appropriate NDI part. If the Model 3113A is to be set up for the 431F series Safety Analyzer, order part number NDI 5023-0027. If the Model 3113A is to be set up for the 431 or 431A series Safety Analyzer, order part number NDI 5023-0028. (Refer to Sect. II, Par. 2.17).

3.6 Prior to placing the Model 3113A on a 431 series Safety Analyzer, swing the Shorting Link 90° away from Low and lock Case Ground down securely on the Safety Analyzer. If the Shorting Link is not moved, the "REMOVE SHORTING LINK" light emitting diode on the Model 3113 will illuminate.

3.7 Plug the 3113A into the isolated power system. Place the Function switch of the Safety Analyzer in the CAL-CHECK position. The meter on the



Safety Analyzer should indicate in the CAL box. If it does not, refer to the 431 series Safety Analyzer manual for troubleshooting and calibration procedures. Now, place the Function switch of the Safety Analyzer in the External Test Current position.

- 3.8 In the case of the 431A or 431A Mod-1 Safety Analyzer any one of the three lights: OK, REVERSED, or OPEN GROUND may be on. These lights are part of a circuit which was designed to check the wiring of a grounded power system. Normally, in an isolated power system that is well balanced, the open ground light will be on; however, depending upon the degree of unbalance, it is possible for any of the other lights to be on even though the isolated power system is operating within its specifications.

3.9 ■ MACRO FAULT TESTS

- 3.10 Depress the MACRO FAULT pushbutton on the Model 3113A until it locks. Observe the light emitting diodes on the front panel of the 3113A

for any indication. If either the L1 or L2 light emitting diode illuminates, then the indicated line is at or very near ground. For purposes of this test a Macro Fault has been defined as a voltage greater than 92 - 97 volts between a line and ground. Even though a Macro Fault LED is illuminated the isolated power system may be operating correctly. To determine if it is, proceed with the line voltage test which follows.

3.11 ■ LINE VOLTAGE TESTING

- 3.12 Depress the LINE VOLTAGE test pushbutton until it locks. The Safety Analyzer meter will now indicate the voltage between line 1 and 2 of the isolated power system.
- 3.13 Depress and hold in the L1-GND pushbutton. The Safety Analyzer meter will now indicate the voltage between line 1 of the isolated power system and ground. This should be about 60 volts with a well balanced system. Release the L1-GND pushbutton.
- 3.14 Repeat paragraph 3.12 for the L2-GND measurement.

**NOTE**

The two measurements L1-GND and L2-GND will not necessarily add up to L1-L2. i.e., L1-L2 is 115 volt, L1-GND is 64 volt, and L2-GND is 80 volt.

3.15 ■ HAZARD CURRENT TEST

3.16 Depress and hold in the L1-HAZARD pushbutton. The Safety Analyzer meter will now indicate the total leakage current from L1 to ground of the isolated power system (the meter scales are 0–.25 milliamperes indicated by the 2.5 volt meter range LED, 0–2.5 milliamperes indicated by the 25 volt range LED, and 0–25 milliamperes indicated by the 250 volt meter range LED). This should be very low with a well isolated power system. Also the line isolation monitor alarm should sound. Release the L1-HAZARD pushbutton.

3.17 Repeat paragraph 3.16 for the L2-HAZARD test.

3.18 In the case of the 431, 431A, or 431A Mod-1 Safety Analyzer, it will be necessary to subtract out the current drawn by the line decoding module during the hazard tests. The value of this current is approximately 450 microamperes.

3.19 ■ VARIABLE RESISTANCE FAULT TEST

3.20 Depress the L1 VARIABLE resistance fault pushbutton until it locks. The current meter on the Safety Analyzer should indicate approximately 0.5 milliamperes. To find the alarm trip level, turn the load control potentiometer counter clockwise. (Note: This control is spring loaded and must be held as it is turned.) Observe the current meter as the current increases until the alarm sounds. This reading is the line isolation monitor alarm trip level. It may be necessary to reset the alarm and repeat the test to determine the exact trip level.

3.21 Repeat the test outlined in paragraph 3.20 for the L2 VARIABLE resistance fault test.



notes

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principles of operation

4.1 ■ GENERAL

- 4.2 This section contains an overall description of the operation of the Model 3113A. Refer to the schematic in Section V while reading the text.

4.3 ■ GENERAL THEORY

- 4.4 Following is an explanation of circuit operation based on the schematic diagram in Figure 5.4. This data is provided for a basic understanding of the instrument.

- 4.5 There are four tests that the Model 3113A ISOLATED POWER SYSTEM ADAPTER performs:

- 1) Macro fault test
- 2) Line voltage test
- 3) Total hazard current test
- 4) Line isolation monitor alarm trip level test

4.6 ■ MACRO FAULT TEST OPERATION

- 4.7 Macro faults are detected by means of neon lamps optically coupled to photo cells. Each line of the isolated power system has a connected neon lamp. When a macro fault occurs, a neon lamp will illuminate and cause the associated photo cell to go to a low resistance condition, this turns a transistor on which illuminates a LED on the front panel of the Model 3113A, thus providing an indication of which line has the macro fault.

4.8 ■ LINE VOLTAGE TEST OPERATION

- 4.9 The LINE VOLTAGE test provides the capability of measuring voltage in the isolated power system between line 1 and 2, line 1 and ground, and line 2 and ground. The operation of this circuit is very simple. Refer to the schematic for further details.

4.10 ■ TOTAL HAZARD CURRENT TEST

- 4.11 The hazard current is the total leakage in the isolat-



ed power system. It is measured by switching a load impedance into the opposite line of the isolated power system to ground. The load impedance also serves as a shunt for the current meter.

4.12 ■ LINE ISOLATION MONITOR ALARM TRIP LEVEL TEST

4.13 It is desirable to know at what level the line isolation monitor alarm trips. A variable resistance fault is provided in the Model 3113A to measure the trip level. The resistance control is decreased until the alarm sounds. The current meter on the Safety Analyzer then indicates the trip level.



performance check

5.1 ■ GENERAL

5.2 This section contains information for making a performance check on the ISOLATED POWER SYSTEM ADAPTOR.

5.3 The Model 3113A uses state of the art circuitry and does not require periodic maintenance except for cleaning. The performance check should be made at least once a year.

5.4 ■ PERFORMANCE CHECK

5.5 The performance check consists of plugging the Model 3113A into a Model 431 series Safety Analyzer and verifying the operation of the LED indicators, voltage measuring circuits, and current measuring circuits.

5.6 The performance check can be used as a part of an incoming quality assurance inspection or as a periodic operational test.

5.7 ■ MACRO FAULT LED TEST

5.8 The operation of macro fault LEDs and their associated circuits may be verified by plugging the Safety Analyzer into a grounded power outlet. Depress the MACRO FAULT pushbutton until it locks. One of the LEDs should be illuminated. Depress the REVERSE POLARITY pushbutton on the Safety Analyzer and note that the illuminated LED extinguishes and the other LED illuminates.

5.9 ■ REMOVE SHORTING LINK TEST

5.10 The REMOVE SHORTING LINK LED may be checked by applying power to the Model 3113A from either an isolated power system or a grounded power system. Use a jumper to short the "J" shaped sense foot to the ground banana plug as shown in Figure 5.1. The REMOVE SHORTING LINK LED should illuminate.



- 5.11 With the Models 431 and 3113A connected as described in paragraph 5.8, set the Function switch to External Current on the Safety Analyzer. Depress the LINE VOLTAGE pushbutton on the Model 3113A and note the 431 meter indication (line voltage - 120 V).
- 5.12 Depress the L2 VARIABLE FAULT pushbutton (note

that the meter indicates about 0.5 milliamperes). Adjust the VARIABLE FAULT potentiometer counterclockwise to 40K Ω . (Note that the meter indicates about 3.0 milliamperes.) This completes the performance testing of the Model 3113A.

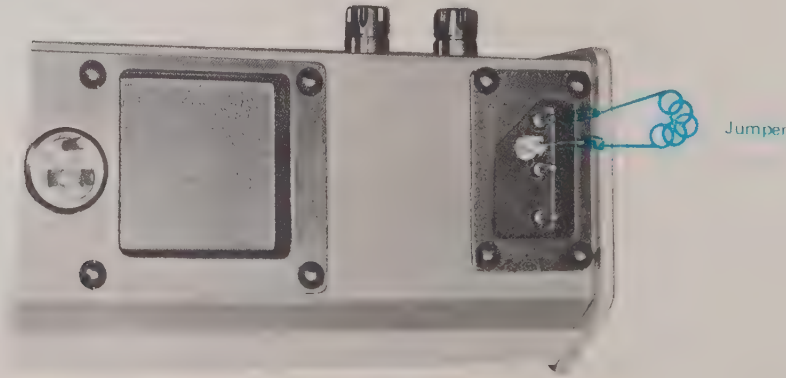


FIGURE 5.1 JUMPER PLACEMENT for SENSE FOOT TEST

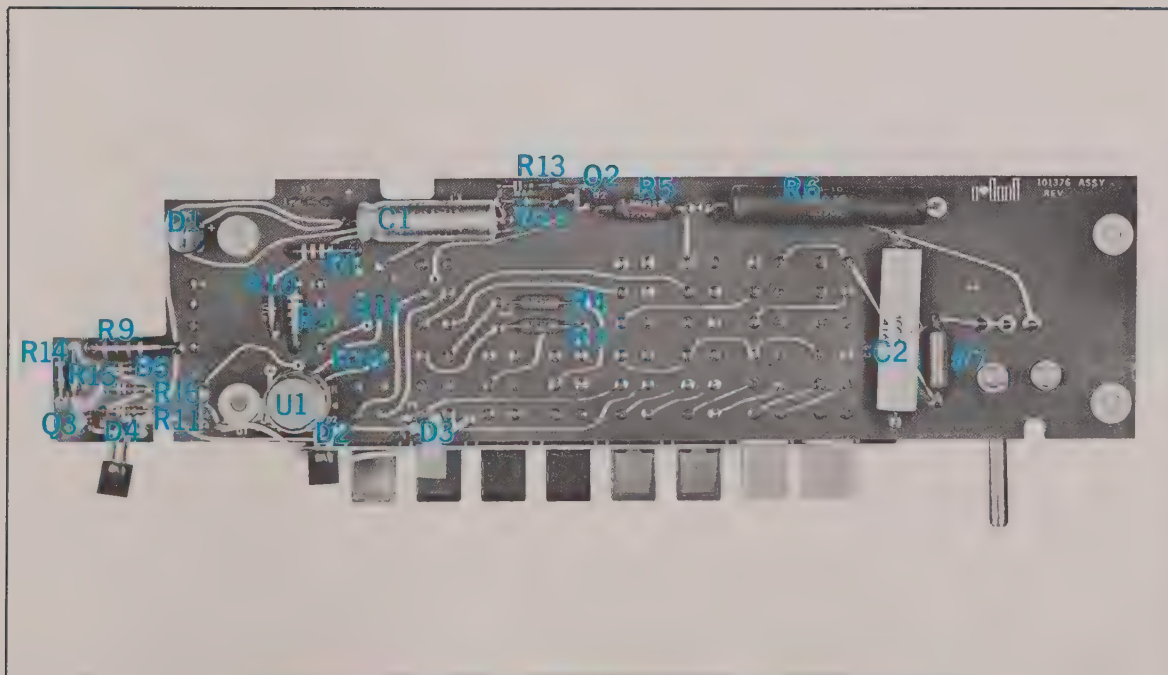


FIGURE 5.2 PC BOARD COMPONENT LOCATION, Component Side

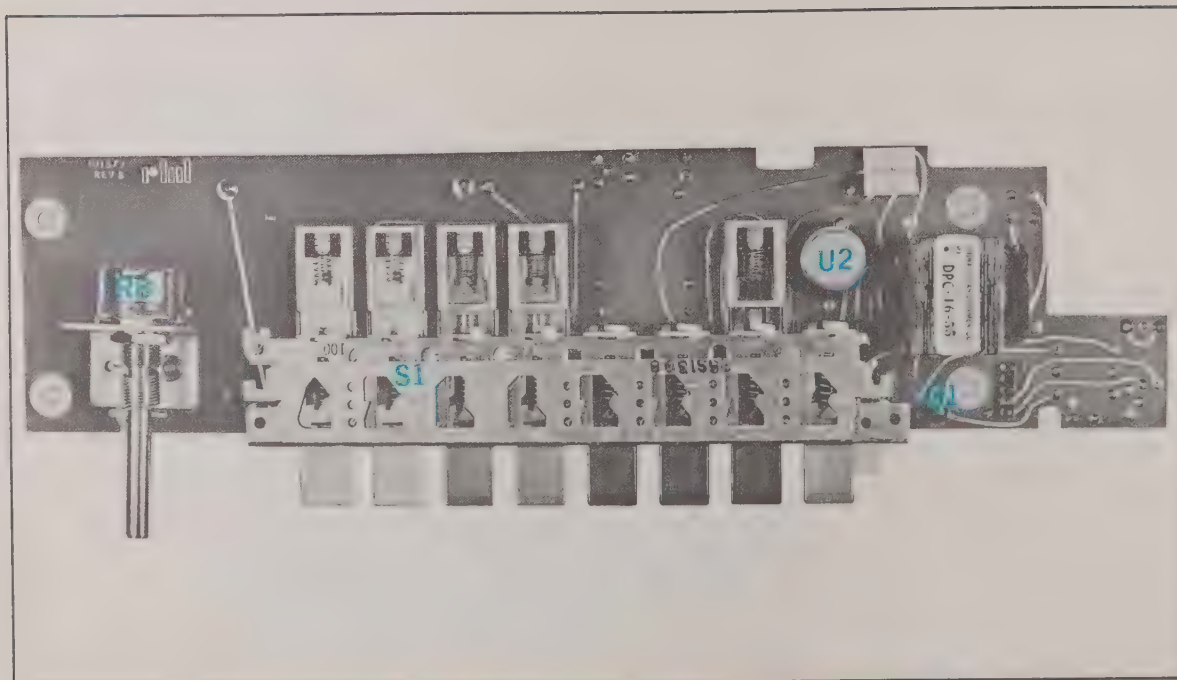


FIGURE 5.3 PC BOARD COMPONENT LOCATION, Switch Side



notes

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replaceable parts

6.1 ■ INTRODUCTION

6.2 This section contains information for ordering replacement parts for the ISOLATED POWER SYSTEM ADAPTOR, Model 3113A.

6.3 Tables 6-1 and 6-2 lists replaceable parts in alphanumerical order to their circuit symbols. Detailed information on a part used more than once in this instrument is listed opposite the first circuit symbol applying to the part. Other circuit symbols applying to the same part refer to the initial symbol. Detailed information includes the following:

- 1) Assembly
- 2) Circuit symbol
- 3) Full description of part
- 4) NDI part number
- 5) Manufacturer of part
- 6) Manufacturer's part number
- 7) Total quantity used in the instrument

6.4 ■ ORDERING INFORMATION

6.5 Most of the parts listed in the parts tables can be secured from local electronic part houses. If this is not feasible or a part needs replacing that is not listed, address order or inquiry to:

Customer Service
NEURODYNE-DEMPSEY, INC.
P.O. Box 1925
Carson City, Nevada 89701
(702) 883-3400

Specify the following information for each part.

- 1) Model and complete serial number on instrument
- 2) Assembly
- 3) Circuit symbol
- 4) NDI part number
- 5) Manufacturer of part
- 6) Manufacturer's part number
- 7) Description

6.6 To order a part not listed in the Tables, give a description of the part and include its function and location.

REFERENCE DESIGNATIONS and ABBREVIATIONS

REFERENCE DESIGNATIONS

A	= assembly
B	= battery
C	= capacitor
J	= jack
Q	= transistor

R	= resistor
S	= switch
TP	= test point

ABBREVIATIONS

A or Amp	= ampere(s)
AC	= alternating current
cm	= centimeter
CMR	= common-mode rejection
db	= decibels
DC	= direct current
°	= degrees
°C	= degrees Celsius (degrees centigrade)
°F	= degrees Fahrenheit
DVM	= digital voltmeter
f	= farad
gnd	= ground
Hz	= hertz
K	= kilo, or 10^3
LA	= left arm
LED	= light emitting diode

m	= milli, or 10^{-3}
M	= mega, or 10^6
MFG	= manufacturer
n	= nano, or 10^{-9}
p	= pico, or 10^{-12}
ppm	= pulses per minute
QTY	= quantity
RA	= right arm
REF	= reference
R L (C)	= right leg (common)
SYM	= symbol
v or V	= volt(s)
W	= watt
μ	= micro, or 10^{-6}
Ω	= ohm(s)



TABLE 6-1 REPLACEABLE PARTS for MODEL 3113A

REF SYM	NDI PART NO.	QTY	DESCRIPTION	MFG	MFG PART NO.
A1	5205-0046	1	PC Board Assembly	NDI	5205-0046
F1	1005-0008	2	Fuse ¼A 3AG Slow-Blow	Littlefuse	313.250
F2	1005-0008		Same as F1		
XF1	1006-0003	2	Fuse Holder	Littlefuse	342014A
XF2	1006-0003		Same as XF1		
J1	2710-0015	1	Power Connector	Amphenol	160-5N
	4902-0002	1	Knob	Raytheon	40702K1
	5023-0027	1	431A Power Connector Cover	NDI	5023-0027
	5023-0028	1	431F Power Connector Cover	NDI	5023-0028



TABLE 6-2 REPLACEABLE PARTS for ASSEMBLY A1

REF SYM	NDI PART NO.	QTY	DESCRIPTION	MFG	MFG PART NO.
	5201-0004	1	PC Board	NDI	5201-0004
C1	0403-0002	1	Cap., Elec: 150 μ f, 25 V	Sprague	TE1212
C2	0410-0005	1	Cap., Mylar: 0.15 μ f, 400 V	CDE	WMF-4P15
D1	2103-0004	1	Diode Bridge	Varo	VE-18
D2	2106-0010	3	LED	Hewlett Packard	5082-4670
D3	2106-0010		Same as D2		
D4	2106-0010		Same as D2		
D5	2102-0009	1	Zener		1N4733A
Q1	2111-0007	3	Transistor		2N4123
Q2	2111-0007		Same as Q1		
Q3	2111-0007		Same as Q1		
J1	2710-0008	1	Jack, Power		
J2	2710-0062	1	Jack, Signal		



TABLE 6-2 REPLACEABLE PARTS for ASSEMBLY A1 (cont.)

REF SYM	NDI PART NO.	QTY	DESCRIPTION	MFG	MFG PART NO.
R1	0301-1334	2	Res., C.C.: 33Ω , $\pm 5\%$, $\frac{1}{2}W$		
R2	0301-1334		Same as R1		
R3	0308-1105	2	Res., M.F.: $124K\Omega$, $\pm 1\%$, $\frac{1}{4}W$		
R4	0308-1105		Same as R3		
R5	0320-0017	1	Res., W.W.: $1.5K\Omega$, $\pm 1\%$, $3W$		
R6	0320-0018	1	Res., W.W.: 104Ω , $\pm 1\%$, $10W$		
R7	0309-1594	1	Res., M.F.: $40.2K\Omega$, $\pm 1\%$, $\frac{1}{2}W$		
R8	0326-0105	1	Res., Var.: $200K\Omega$	NDI	0326-0105
R9	0303-1822	1	Res., C.C.: 820Ω , $\pm 5\%$, $1W$		
R10	0300-1514	3	Res., C.C.: $51K\Omega$, $\pm 5\%$, $\frac{1}{4}W$		
R11	0300-1432	3	Res., C.C.: 430Ω , $\pm 5\%$, $\frac{1}{4}W$		
R12	0300-1514		Same as R10		
R13	0300-1432		Same as R11		
R14	0300-1303	1	Res., C.C.: $3K\Omega$, $\pm 5\%$, $\frac{1}{4}W$		
R15	0300-1514		Same as R10		
R16	0300-1432		Same as R11		
R17	0300-1435	2	Res., C.C.: $430K\Omega$, $\pm 5\%$, $\frac{1}{4}W$		
R18	0300-1435		Same as R17		



TABLE 6-2 REPLACEABLE PARTS for ASSEMBLY A1 (cont.)

REF SYM	NDI PART NO.	QTY	DESCRIPTION	MFG	MFG PART NO.
S1	2505-0014	1	Function Switch	NDI	2505-0014
T1	1201-0013	1	Power Transformer	Signal	DPC 16-55
U1	2116-0006	2	Optical Isolator	Vactec	VTL-9B6
U2	2116-0006		Same as U1		

appendix

DAMAGE & SHORTAGE

Before you fully unpack any unit **READ THIS** for your protection

(THIS INFORMATION APPLIES ONLY ON SHIPMENTS WITHIN THE UNITED STATES)

DAMAGE This shipment was packaged and delivered to the carrier with the utmost care to insure safe delivery of goods. When shipment is received and signed for by the transportation company, consignor's responsibility ceases. Do not accept shipment which evidences damage or shortage until agent of carrier endorses a statement of the irregularity on the face of the transportation receipt. Without documentary evidence, claim cannot be filed.

CONCEALED DAMAGE Interstate Commerce Commission has indicated that a carrier is as much responsible for concealed damage as for visible damage in transit. Upon receipt of shipment, promptly unpack and check thoroughly. If concealed damage is discovered, cease further unpacking and request immediate inspection by local agent of carrier. A written report of the agent's findings, with his signature, is necessary to support claim.

SHORTAGE Check shipment against shipping papers. Do not discard packing materials or packing cases until contents have been found to be correct. The removal of badly needed items, before shipment has been checked, may create a shortage. Check all possibilities before reporting a shortage.

CLAIMS If your agent or carrier has been given an opportunity to inspect the shipment, any claim for a shortage or damaged merchandise can be handled as a simple and routine procedure. Claims must be filed by consignee. Shipping terms are f.o.b. Napa, California.

LOSS In the event of complete loss, claim will be handled in the same manner as for Shipping Damage or Shortage.

**Note further information below.*

SHIPPING DAMAGE OR SHORTAGE

AIR FREIGHT — Claim must be initiated at point of destination. Claim must be filed by submitting a letter on company stationery with an explanation of the extent of damage or loss and forwarded with a copy of the original* air bill, and original invoice or photostat of same, to the

airline having carried the shipment.

*Upon request certified photostatic copies of original papers held by Neurodyne-Dempsey, Inc. required in support of claims will be made available.

PARCEL POST / UPS

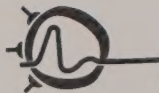
PLACING CLAIM FOR DAMAGE — For those shipments insured by Parcel Post, the addressee initiates the claim by filling out Post Office Dept. Form 3812, "Request for Payment of Domestic Postal Insurance". Item 12 is to be other than Neurodyne-Dempsey, Inc. Damaged material must be returned to the Post Office of address for inspection. A new purchase order is required by Neurodyne-Dempsey, Inc. to cover the cost of repairs (or in the case of loss or refilling-replacement order). Damaged material will be repaired and returned. Party named in item 12 of form 3812 will receive reimbursement for repair cost from Post Office Department.

PLACING CLAIM FOR LOSS — In the event of a report to consignor of loss or refilling, Post Office Dept. Form 3812

will be initiated by Neurodyne-Dempsey, Inc. at point of origin. If, after Post Office investigation, the material is not located, disposition from this point will be the same as stated in the above paragraph—"Placing claim for damage."

PLACING CLAIM FOR DAMAGE TO SHIPMENTS BY UNITED PARCEL—The addressee must notify Neurodyne-Dempsey, Inc. who will notify United Parcel Service giving the shipper's number and date parcel was shipped. United Parcel Service will send a representative to inspect the damage and advise proper disposition. A new purchase order is required by Neurodyne-Dempsey Inc. to cover the cost of repairs or in the case of loss or refilling, a replacement order. Damaged material will be repaired and returned.

DATA SHEET 1003-10/73



NEURODYNE-DEMPSEY, INC.
P.O. Box 1925, Carson City, Nevada 89701



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